Using Genetic Ancestry vs. Racial/Ethnic Classification to Identify Novel Therapeutic Targets for Asthma and other Common Diseases

with

**Esteban Burchard**

Director, Center for Genes, Environments & Health
Professor of Bioengineering & Therapeutic Sciences & Medicine
University of California San Francisco

Dr. Burchard’s scientific interests center on identifying genetic risk factors for common diseases and traits (e.g. asthma and drug response) in racial/ethnically mixed populations. "I am fascinated with how racial/ethnic background influences health and risk of disease.” For example, in the U.S., asthma prevalence and severity are highest in Puerto Ricans and lowest in Mexican Americans. This is paradoxical because both groups are categorized by the census as “Hispanic or Latino.” It is clear that social, environmental and genetic risk factors contribute to these health disparities. It is also clear that the distribution of these risk factors varies among racial/ethnic groups. However, disparities in asthma prevalence between Latino groups persists even when these groups live in similar environments. Therefore, asthma cannot be explained solely by environmental factors alone. To this end, they have created the largest minority pediatric gene-environment study of asthma in the U.S. by recruiting more than 10,000 study participants as part of the Genetics of Asthma in Latino Americans (GALA I), Genes-environments & Admixture in Latino Asthmatics (GALA II) and the Study of African Americans, Asthma Genes & Environments (SAGE). He works in collaboration with a multidisciplinary team from several Universities. Using tools from these disciplines, they perform comprehensive epidemiologic research (genetic, social and environmental) designed to untangle why populations differ in health and disease. They leverage the rich ancestry in these populations to untangle complex gene-environment interactions for health and disease.

Esteban González Burchard, M.D., M.P.H. is a Professor of Medicine and Bioengineering and Therapeutic Sciences at the University of California, San Francisco. Dr. Burchard received his M.D. degree and genetic training from Stanford University School of Medicine in 1995. He completed clinical training in Internal Medicine at Harvard’s Brigham and Women’s Hospital and Pulmonary/Critical Care Medicine training at UCSF. Dr. Burchard also completed clinical research training at the Harvard School of Public Health. He joined the UCSF faculty in 2001. Dr. Burchard completed additional training in genetic epidemiology with Dr. Neil Risch of Stanford University. In 2006 he received his Master’s in Public Health in Epidemiology from UC Berkeley. Dr. Burchard’s major academic interest centers on identifying genetic risk factors for asthma and drug response in racially diverse (admixed) populations.

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